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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,733	06/23/2003	Robert Davis	PD-202133	9024

7590 08/30/2006

Hughes Electronics Corporation  
Patent Docket Administration  
Bldg . 1, Mail Stop A109  
P.O. Box 956  
El Segundo, CA 90245-0956

EXAMINER
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KOSTAK, VICTOR R

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/601,733	<b>Applicant(s)</b> DAVIS ET AL.	
	<b>Examiner</b> Victor R. Kostak	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 25-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. Applicant's arguments filed on 07/19/06, in view of the amendment, have been fully considered but they are not persuasive. The previous rejections accordingly still apply and are repeated below from the last Office action, modified in connection with amended claims 11 and 21.

Applicant's arguments are addressed in the context of the rejections.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

OR

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7-15, 19, 20, 29 and 30 stand rejected under 35 U.S.C. 102(e) as being anticipated by Dye et al.

Reviewing the A/V receiving and processing system of Dye (noting particularly Figs. 1B, 2A, 2B, 3 and 5), it involves a television (or computer monitor) connected to a set-top box 57 (applicant's claimed personal multimedia device) that increases the frame rate of a received video signal when it is less than the native frame rate format, or decreases the received format when is greater than the native receiver frame rate format (section [460]). The decision to convert the frame rate inherently requires a comparison between the received and native formats

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in order to first detect that the condition exists, upon initial detection of the incoming video signal and its format.

In applicant's remarks spanning pages 10 and 11 essentially dismisses the explicit statement in section [0460], instead arguing that Dye adds intermediate frames when the frame rate needs to be increased, and "compresses" existing frames when the frame rate needs to be reduced (relying on a blending processing disclosed by Dye).

Section [0460] states that up-converting or down-converting the input frame rate is done to match the native format display device. However, applicant appears not to acknowledge this basic description of down-conversion of a frame rate.

Down conversion of a frame rate is characterized by a reduction of the amount of frames per unit time relative to the original amount of frames per that same unit of time. Therefore, *there are lesser frames than the original amount of frames per unit time in the down-converted state*. Regardless of how the remaining lesser frames are derived from the greater amount of original frames (such as by blending two to become one, which applicant appears to argue), it cannot be denied that some of those original frames *must* be removed, because, clearly, there is a lesser amount of frames per unit time. The original frames cannot all remain because the amount of frames *must* be less than the amount of original frames that defines a down-converted frame rate. Claim 1 therefore stands rejected.

Applicant is further directed to the following statements corroborating the necessity to remove frames in a down-conversion process:

(1) section [0056] of Youn, who states that *"frame skipping is also needed when an end-user only supports a lower frame-rate."*

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(2) section [0071] of Chaddha, where it says: *“If a frame rate lower than that provided .. temporal layers can be dropped which are unnecessary for achieving the desired frame rate.”*

(3) section [0029] of Yamaguchi where it is stated that *“a frame conversion method ... comprising a second frame rate that is lower than the first frame rate ... by means of a frame-based skip process ...”*

(4) section [0034] of Selby who points out that *“for frame rate down conversion, one of the input frames is dropped from the output sequence.”* and

(5) col. 7 lines 24-26 of Brooks discloses that *“frame rate block will drop frames of data to lower the number of frames per second, or will add frames of data to increase the number of frames per second.”*

Claim 11 has been amended to cover the same language of that in claim 1 that applicant argues. Because claim 1 remains rejected for the reasons of record, amended claim 11 does now for the same reason.

As for claims 2, 11 and 29, frame rate increasing or decreasing inherently requires temporal processing of the video information by (1) adding by some form of interpolation to generate interposing frames to increase the frame count/unit time, and (2) by dropping frames to remove video information in a lessening of frames per unit time. Dye also includes a graphics processor (graphics engine 212 shown, e.g., in Fig. 5) to provide various video processing including scaling (e.g. sections [0117], [0120] and [0249]).

Dependent claims were not addressed explicitly on their own merits but argued on the basis of their dependency on the independent claims.

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Considering claim 30, the device can be a set-top box, mentioned previously (component 57 in Fig. 1B).

As for claim 14, Dye mentions the MPEG video format as an option for receiving A/V streams by the STB (e.g. section [0107]). The MPEG stream is characterized by header data followed by payload data per unit transmission frame. Inherently characteristic of the header data is various data pertaining to video parameters including frame rate (see col. 3 lines 41-43 of 5,111,292 cited herein which describes the MPEG stream structure).

As for claims 3 and 15, the generating of and interposing frame (involving the frame rate increase) involves both the odd and even fields of an NTSC video formatted signals in forming of the HDTV signal (e.g. section 0116).

Regarding claims 7 and 12, Dye decodes the received signal (140 in Fig. 3 detailed in Fig. 5), processes it and encodes the processed A/V signal into (what can be) an NTSC format for presentation on the analog display unit(section [0116]).

As for claims 8 and 13, Dye discloses a television and STB connected to a standard cable medium, for example (section [0082]). Televisions and cable boxes both have tuners for demodulating the received A/V signals at respective channel bands. Dye also allows for peripheral devices to be connected (e.g. section [0092]).

As for claim 9, the format data is in the header (noted above regarding claim 14).

Considering claim 10, the compression format can MPEG2 (section [0107]).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dye et al.

Applicant relies on his arguments presented to counter the rejection of the independent claims. Those arguments have been addressed above, and therefore the rejection based on 35 USC 103(a) accordingly still apply.

Dye points out that the frame rate can be adjusted to match the VDRL (Video Display Refresh List) and the display device by increasing or decreasing the rate, whichever applies. He gives some examples of well known video formats having designated frame rate, including NTSC, PAL film and HDTV (sections [0086] and [0097]), and points out that other analog or digital formats can be used.

In view of this explicit allowance, it would have been obvious to one of ordinary skill in the art to convert the frame rate to accommodate any well known format, such as PAL, NTSC, film rate (i.e. 24 Hz), VGA, XGA, etc. from the various A/V sources that can be applied (Dye specifies plural input sources and peripherals (sections [0082] – [0084]), for presentation on the display device that can also be accommodate any format in its native mode.

4. Claims 21-23 and 25-28 are now rejected under 35 U.S.C. 103(a) as being unpatentable over Voois et al.

Applicant incorporates the subject matter of original claim 24 into base independent claim 21. That combined subject matter is addressed below, consistent with the rejection of the

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last Office action. Applicant's argument that Vois does not disclose removal of frames when down converting has been addressed in the last Office action as well, and is again countered by the examiner in the same manner as argued above with regard to general frame dropping, which is required to down convert a frame rate (noting the Dye rejection and corroborating references that disclose frame rate down conversion).

Reviewing the videoconferencing system of Voois (noting particularly Figs. 1, 2, 6K and 6Q), it includes a first personal multimedia device (set-top box terminal 110: col. 4 lines 39-42) that outputs video signals in a first format (PAL or NTSC: stage 132 in Fig. 2). Voois points out that video input 126 can be an analog camera but also a digital camera whose output must be converted into standard displayable PAL/NTSC television format for display on unit 132.

(Voois also points out that other A/V sources are available from plural ports 121 and 123 as well as through ISDN lines: col. 6 line 23+, all of which would have to be formatted into PAL or NTSC modes for presentation). Camera 126 read on the claimed first video capture device wherein display 130 can present the locally captured video data (e.g. Fig. 6K). Voois also points out that another identical STB set-up 112 is connected to the STB 110 through line 114 (col. 4 lines 32-36). That set-up would accordingly include the same system components including its own capture device, and would operate in a respective second format (its own PAL or NTSC format) which could be in the same format or different from the format of the first STB 110, thereby meeting claim 21 and 23.

As noted above, Voois allows for plural different display modes and therefore different frame rates (PAL and NTSC characterized by different frame rates as well as line counts). Voois also allows for the capability of increasing or decreasing the frame rate of display (col. 9 line 50

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– col. 10 line 12) which would require processor 120 to interpolate or drop frames in a scaling procedure.

Although Voois does not specifically say that the frame rate conversion is carried out to match the native display format but for providing selective image quality (i.e. resolution quantization/frame rate trade-off), it would have been obvious to one of ordinary skill in the art to include consideration for compatibility with the local display unit 130 for acceptable presentation quality thereon.

As for claim 23, a third STB set-up can be included (e.g. col. 1 lines 40-51; 10 lines 19-29).

Regarding claim 25, interpolation to generate a temporally-interposed frame typically involves both odd and even field data from frames adjacent to the new frame in question, which provides the most likely candidate video data that would be presented between the adjacent real frames.

As for claims 26-28, it would have been obvious to one of ordinary skill in the art to adopt any of the well known video standards characterized by their respective frame rates, including PAL, NTSC, film (24 Hz) and HDTV since Voois points out that video sources can be from any of plural well known media (PSTN, internet, LAN, WAN) and that the display devices can be a television, computer monitor or other devices (col. 4 lines 2-10).

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor R. Kostak whose telephone number is (571) 272-7348. The examiner can normally be reached on Monday - Friday from 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**Any response to this final action should be mailed to:**

Box AF

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**Or faxed to:**

**(571) 273-8300**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is (703) 308-HELP.



Victor R. Kostak  
Primary Examiner  
Art Unit 2622

VRK